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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.	
10/517,416	12/08/2004	Daniel Dube	MC050YP	2603	
210 75	590 03/20/2006		EXAMINER		
MERCK AND CO., INC P O BOX 2000			SEAMAN, D MARGARET M		
RAHWAY, NJ 07065-0907			ART UNIT	PAPER NUMBER	
•			1625		

DATE MAILED: 03/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

		A	Application No.	Applicant(s)				
Office Action Summary			10/517,416	DUBE ET AL.				
		E	xaminer	Art Unit				
		C	). Margaret Seaman	1625				
- The MAILING DATE of this communication appears on the cover sheet with the correspondence address - Period for Reply								
WHICHEVER - Extensions of till after SIX (6) MC - If NO period for - Failure to reply Any reply receive	IED STATUTORY PERIOD F R IS LONGER, FROM THE M me may be available under the provisions of this comm reply is specified above, the maximum standard within the set or extended period for reply and by the Office later than three months a term adjustment. See 37 CFR 1.704(b).	AILING DAT of 37 CFR 1.136(a nunication. atutory period will a will, by statute, car	E OF THIS COMMUNICATION  In no event, however, may a reply be to apply and will expire SIX (6) MONTHS from use the application to become ABANDON	N. imely filed in the mailing date of this of ED (35 U.S.C. § 133).				
Status					•			
2a)☐ This ac 3)☐ Since t	nsive to communication(s) file ction is <b>FINAL</b> . his application is in condition in accordance with the practi	2b)⊠ This action for allowance			e merits is			
Disposition of C	Claims							
4a) Of t 5)⊠ Claim(s 6)⊠ Claim(s 7)□ Claim(s	s) 1-31 is/are pending in the ashe above claim(s) is/as s) 1-23 is/are allowed. s) 24-31 is/are rejected. s) is/are objected to. s) are subject to restricters	re withdrawn						
10) The dra Applica Replace	ecification is objected to by the wing(s) filed on is/are: nt may not request that any objected to drawing sheet(s) including the or declaration is objected to	a) ☐ accept ction to the dra the correction	wing(s) be held in abeyance. So is required if the drawing(s) is o	ee 37 CFR 1.85(a). bjected to. See 37 C				
Priority under 3	5 U.S.C. § 119							
<ul> <li>12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).</li> <li>a) All b) Some * c) None of:</li> <li>1. Certified copies of the priority documents have been received.</li> <li>2. Certified copies of the priority documents have been received in Application No</li> <li>3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).</li> <li>* See the attached detailed Office action for a list of the certified copies not received.</li> </ul>								
2) Notice of Draft 3) Information Dis	rences Cited (PTO-892) sperson's Patent Drawing Review (P sclosure Statement(s) (PTO-1449 or ail Date		4) Interview Summar Paper No(s)/Mail [ 5) Notice of Informal 6) Other:	Date	O-152)			

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## **DETAILED ACTION**

This application was filed 12/8/2004 and is a 371 of PCT/CA03/00957 (6/23/03) which claims benefit of 60/391364 (6/25/02) and 60/428313 (11/22/02). Claims 1-31 are before the Examiner.

## Claim Rejections - 35 USC § 112

- 1. The following is a quotation of the second paragraph of 35 U.S.C. 112:
  - The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
- 2. Claim 29 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, claim 29 is ambiguous because the claim depends from claim \_\_\_. It is suggested that the claim be corrected.
- 1. The following is a quotation of the first paragraph of 35 U.S.C. 112:
  - The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
- 2. Claim 24 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which

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was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The instant specification does not adequately describe the leukotriene receptor antagonist, leukotriene biosynthesis inhibitor or M2/M3 antagonist which might be combined with the instantly claimed compounds. T

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- 3. Claims 25-31 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The instant specification does not adequately describe the nexus between PCE4 inhibition and the instantly claimed treatment or prevention of the different diseases of the claims 25-31. The instant specification describes several assays that could test for the activity of the instant compounds to treat several of the instantly claimed diseases/conditions. However, those assays are only described in the specification. Due to this, it is not seen where the instant specification adequately describes the nexus between the inhibition of the PDE4 receptor and a useful treatment or prevention of a single disease or condition.
- 4. Claims 25-31 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which

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was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

There are many factors to be considered when determining whether there is sufficient evidence to support a determination that a disclosure does not satisfy the enablement requirement and whether any necessary experimentation is "undue". These factors include 1) the breadth of the claims, 2) the nature of the invention, 3) the state of the prior art, 4) the level of one of ordinary skill, 5) the level of predictability in the art, 6) the amount of direction provided by the inventor, 7) the existence of working examples, and 8) the quantity of experimentation needed to make or use the invention based on the content of the disclosure. In re Wands, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988).

- 1) The breadth of the claims,
- 2) The nature of the invention,
- 3) The state of the prior art,
- 4) The level of one of ordinary skill,
- 5) The level of predictability in the art,
- 6) The amount of direction provided by the inventor,
- 7) The existence of working examples,
- 8) The quantity of experimentation needed to make or use the invention based on the content of the disclosure.

**The nature of the invention:** The nature of the invention is the method of treating and preventing a disorder that is inhibited byPDE4.

The state of the prior art: The state of the prior art is that it involves screening in vitro and in vivo to determine which compounds exhibit the desired pharmacological

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activities (i.e. what compounds can treat which specific disease). There is no absolute predictability even in view of the seemingly high level of skill in the art. The existence of these obstacles establishes that the contemporary knowledge in the art would prevent one of ordinary skill in the art from accepting any therapeutic regimen on its face.

The predictability in the art: It is noted that the pharmaceutical art is unpredictable, requiring each embodiment to be individually assessed for physiological activity. In re Fisher, 427 F. 2d 833, 166 USPQ 18 (CCPA 1970) indicates that the more unpredictable an area is, the more specific enablement is necessary in order to satisfy the statute. In the instant case, the instantly claimed invention is highly unpredictable since one skilled in the art would recognize that in regards to the therapeutic effects of all diseases, whether or not the inhibition of PDE4 receptors would make a difference in the disease. Hence, in the absence of a showing of a nexus between any and all known diseases and the inhibition of PDE4receptors, one of ordinary skill in the art is unable to fully predict possible results from the administration of the compound of claim 1 due to the unpredictability of the role of inhibition of PDE4 receptors.

The presence or absence of working examples: Many examples of assays that could test for the activity being claimed are described by the instant specification. However, no assays have been performed. The specification only describes what could be done and what the activity could treat or prevent.

The amount of direction or guidance present: The guidance present in the

specification is that of the compounds are inhibitors of PDE4 and therefore can treat or

prevent many diseases/conditions. Page one of the specification states that PDE4 is

thought to play an important role in a variety of inflammatory and other diseases.

However, the specification does not seem to enable a correlation between the inhibition

of PDE4 receptors and the treatment or prevention of any and all diseases.

The breadth of the claims: The claims are drawn to the treatment or prevention of any

and all diseases mediated by the PDE4 receptor with the compound of claim 1.

The quantity of experimentation needed: The quantity of experimentation needed is

undue. One skilled in the art would need to determine what diseases out of all known

diseases would be benefited by the inhibition of PDE4 receptors and then would further

need to determine which of the claimed compounds would provide treatment or

prevention of the disease.

The level of the skill in the art: The level of skill in the art is high. However, due to the

unpredictability in the pharmaceutical art, it is noted that each embodiment of the

invention is required to be individually assessed for physiological activity by in vitro

and in vivo screening to determine which compounds exhibit the desired

pharmacological activity and which diseases would benefit from this activity.

Thus, the specification fails to provide sufficient support of the broad use of the

compounds of claim 1 for the treatment of any disease. As a result necessitating one of

ordinary skill to perform an exhaustive search for which diseases can be treated by which compound of claim 1 in order to practice the claimed invention.

Genentech Inc. v. Novo Nordisk A/S (CA FC) 42 USPQ2d 1001, states that "a patent is not a hunting license. It is not a reward for search, but compensation for its successful conclusion" and "[p]atent protection is granted in return for an enabling disclosure of an invention, not for vague intimations of general ideas that may or may not be workable".

Therefore, in view of the Wands factors and In re Fisher (CCPA 1970) discussed above, to practice the claimed invention herein, one of ordinary skill in the art would have to engage in undue experimentation to test which diseases can be treated by the compounds of the instant claims, with no assurance of success.

This rejection can be overcome by deleting the claims.

## Allowable Subject Matter

5. Claims 1-24 are free of prior art. The closest art is Wilhelm (US Patent #5455252) which teaches substituted 6,8-quinolines. However Wilhelm does not teach the instant substituent on the 8-position ring.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to D. Margaret Seaman whose telephone number is 571-272-0694. The examiner can normally be reached on 730am-4pm, Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cecelia Tsang can be reached on 571-272-0562. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

D. Margaret Seamar Primary Examiner Art Unit 1625

dms